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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,431

09/26/2003

Manus P. Henry

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09/30/2004

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EXAMINER

NGUYEN, LINH M

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,431

Applicant(s)

HENRY, MANUS P.

Examiner

Linh M. Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-27 is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/07/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claims 1-27 are presented in the instant application according to the Applicants' filing on 09/26/2003.

Title

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the recitation "alternating between outputting the first signal and second signal over a predetermined time to generate an output signal that is substantially at the desired frequency" renders the claim indefinite since the output signal is generated by alternating between the first signal and the second signal which results in variable frequency, different duty cycles; it is unclear how this output signal is substantially at the desired frequency. Clarification is required.

With respect to claim 12, the recitation "the first signal and second signal, being alternately output over a predetermined time, result in an output signal that is substantially having the desired frequency" renders the claim indefinite, similarly as indicated in claim 1 rejection above, since the output signal is generated by alternating between the first signal and

Art Unit: 2816

the second signal which results in variable frequency, different duty cycles; it is unclear how this output signal is substantially at the desired frequency. Clarification is required.

With respect to claim 21, the recitation “operable to alternately output the first frequency and the second frequency to obtain an output signal having an output frequency substantially equal to the corresponding frequency,” renders the claim indefinite, similarly as indicated in claims 1 and 12 rejection above, since the output signal is generated by alternating between the first frequency and the second frequency which results in variable frequency, different duty cycles; it is unclear how this output signal is substantially equal to the corresponding frequency. Clarification is required.

Still with respect to claim 21, claim 21 recites the limitation "the desired frequency " in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Still with respect to claim 21, claim 21 is also rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: 1) “a corresponding frequency”, line 3, and “the desired frequency”, lines 4-5; 2) “ a mapping subsystem”, line 3, and “a frequency generator”, line 4.

Claims 2-12, 13-20 and 22-23 are also rejected under 35 U.S.C. 112, second paragraph because of their dependency on claims 1, 12, and 21, respectively.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2816

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Monnier (U.S. Patent No. 4,200,842).

With respect to claim 1, as best understood, Monnier discloses, in Figures 1-2, An apparatus and a corresponding method, the method including the steps of a) outputting a first signal [22] having a first frequency that is lower than a desired frequency; b) outputting a second signal [12] having a second frequency that is higher than the desired frequency; and c) alternating [20] between outputting the first signal and the second signal over a pre-determined time to generate an output signal that is substantially at the desired frequency.

Allowable Subject Matter

6. Claims 24-27 are allowed.

7. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 12-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this office action.

9. The following is a statement of reasons for the indication of allowable subject matter (with the examiner's best interpretation of the claims).

The closest prior art on record does not show or fairly suggest:

- A method, in which alternating between outputting the first signal and the second signal includes a) generating a first half-cycle of the first signal; and b) generating a second half-cycle

Art Unit: 2816

of the second signal in time series with the first half-cycle of the first signal, as called for in claim 2;

- A method, in which alternating between outputting the first signal and the second signal includes a) generating a half-cycle of the first signal, b) stopping generation of the half-cycle of the first signal; and c) generating a half-cycle of the second signal, as called for in claim 3;

- A method, in which alternating between outputting the first signal and the second signal includes generating half-cycles of the first signal and the second signal, during the pre-determined time, in a pre-determined ratio to one another.

- A method, in which alternating between outputting the first signal and the second signal includes a) calculating a target value based on the desired frequency and a reference signal; b) comparing a count value that is accumulated in a counter in accordance with the reference signal to the target value; and c) generating the first signal as long as the count value is less than the target value, as called for in claim 5;

- A system including a counter operable to increase a count value with reference to the reference signal; and a comparison circuit operable to compare the count value with a target value and output a corresponding comparison signal, in combination with the remaining claimed limitations, as called for in claim 12 (*if overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this office action*).

- A method of generating an output signal having a desired frequency, the method includes the following steps a) determining that the first count value has become a current count value that is greater than or equal to the target value; b) calculating a remainder of a division of the current count value by the target value; c) re-setting the counter at an initial count value that

Art Unit: 2816

is based on the remainder; and d) outputting a second output value, whereby the output signal is obtained, as called for in claim 24.

Remarks

10. The Applicant is noted that claims 21 and its independent claims 22-23 were neither rejected nor allowed due to the defects of the claim (see 112 2nd paragraph rejections set forth in this office action).

Citation of Relevant Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Sato (U.S. Patent No. 5,410,582) discloses a reference signal generating apparatus.

Prior art Muramatsu (U.S. Patent No. 5,222,111) discloses a pulse generator circuit employing arithmetic function counter.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh M. Nguyen whose telephone number is (571) 272-1749. The examiner can normally be reached on Alternate Fri, Monday - Thursday from 7:00 to 4:30.

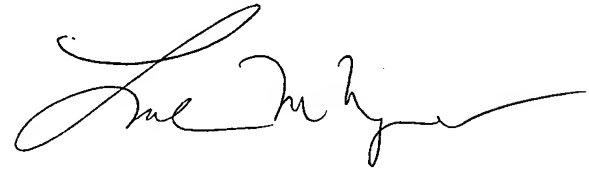
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2816

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMN

**LINH MY NGUYEN
PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'Linh My Nguyen', with a long horizontal flourish extending to the right.